

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:)
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 Brian J. Ray et al.)
)
 Application No: 10/722,172) Examiner: (unassigned)
)
 Filed: November 24, 2003) Art Unit: 2835
)
 For: SYSTEM AND METHOD FOR CABLE)
 MANAGEMENT ON RACK MOUNTED)
 INSTALLATIONS)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION TO MAKE SPECIAL FOR PENDING APPLICATION
[C.F.R. § 1.102(d) / MPEP § 708.2, VIII]

This document is a petition to advance the examination and processing of the above-identified patent application. This petition is submitted pursuant to 37 C.F.R. § 1.102(d) and MPEP § 708.2, VIII.

Advanced examination and processing of the application is respectfully requested per MPEP § 708.2, VIII. Accordingly, the applicants have taken the appropriate steps to comply with the special examining procedures set forth in the MPEP. The steps taken are:

1. This petition to make special has been made with the accompanying fee as set forth in 37 CFR 1.17(i).
2. The claims presented in the application are all directed to a single invention.
3. A pre-examination search has been made. A list of the field of search by class and subclass, publication, foreign patents, and other prior art related material is included

below.

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Attorney Docket No.: 002717.P099

Application No.: 10/722,172

4. A copy of each of the references deemed most closely related to the subject matter encompassed by the claims is attached to this petition, if said references are not already of record.

5. A detailed discussion of the references, with the particularity required by 37 CFR 1.111(b) and (c), is attached to this document. The detailed discussion includes a discussion of how the claimed subject matter is patentable over the references.

PRE-EXAMINATION SEARCH

The following is a list of the field of search by class and subclass, publication, foreign patents, and other prior art related material:

385/134, 385/135, 385/136, 385/137, 174/40R, 174/40CC, 174/48, 174/49, 174/50, 174/52.1, 174/59, 174/60, 174/68.1, 174/68.3, 174/70R, 174/71R, 174/72R, 174/72A, 174/95, 174/97, 174/135, 174/137R, 174/168, 174/169, 174/170, 248/49, 248/65, 248/68.1, 248/69, 248/74.1, 248/74.2, 248/74.3, 248/74.4, 361/600, 361/826, 361/827, 361/829, D08/349, D08/354, D08/356, D13/123, D13/133, D13/154, D13/155, 312/223.1, 312/223.6.

The resulting searches provided an extensive list of related patents and patent applications, the most pertinent of which are listed below.

U.S. Patent Number	Issue Date	Inventor	Class/ Subclass
2,363,327	November 21, 1944	R.L. Hodgkins et al.	175
5,731,546	March 24, 1998	Miles et al.	174
6,504,094	January 7, 2003	Woo et al.	174
6,540,312	April 1, 2003	Lane	312
6,553,172	April 22, 2003	Lortie et al.	385
6,614,978	September 2, 2003	Caveney	385
6,678,456	June 13, 2004	Etmad-Moghadam	385
6,127,631	October 3, 2000	Green et al.	174
6,215,064	April 10, 2001	Noble et al.	174
6,362,422	March 26, 2002	Vavrik et al.	174
5,806,811	September 15, 1998	Viklund et al.	248
6,118,075	September 12, 2000	Baker et al.	174
1,365,613	January 11, 1921	W.J. Hiss	
3,668,744	June 13, 1972	Moody et al.	248
4,688,961	August 25, 1987	Shioda et al.	403
6,378,811	April 30, 2002	Potter et al.	248

U.S. Patent Application No.	Publication Date	Inventor	Class/ Subclass
2003/0037953	February 27, 2003	Sarkinen et al.	174

2003/0051892	March 20, 2003	Mattei et al.	174
2004/0026105	February 12, 2004	Mendoza	174

U.S Design Patent

Application No.	Issue Date	Inventor	Class/ Subclass
D456,241	April 30, 2002	Chan et al.	D08/356
D479,707	September 16, 2003	Caswell	D13/155
D339,982	October 5, 1993	Rodriguez Prados	D08/356
D493,355	July 27, 2004	Dinh	D08/356

Foreign Patent

Application No.	Published Date	Inventor	Class/ Subclass
EP 179750	April 30, 1986	Dewey, James D.	H04Q
DE 3921224	January 10, 1991	Scholtholt	H02B1

Other related publications were examined in attempt to identify automatic protection switching systems similar to the present invention. Those publications are:

“Racks and Cable Management Products”, www.heller.tyton.com

“Cable Management Rack Systems”, Panduit Network Connectivity Group, www.panduit.com

“CMR-84 Cable Management Relay Rack”, Great Lakes Case & Cabinet Co., Inc., www.werackyourworld.com

“Signature Solutions...Cable Management”, Chatsworth Products, Inc., www.chatsworth.com/cablemanagement

DETAILED DISCUSSION OF THE REFERENCES

Set forth below are the pending independent claims 1, 18, 29, 41, 47 and 51, of the application.

1. A cable harness comprising:
a frame capable of being attached to a rack, the rack having a number of blades disposed therein, the frame including a number of channels, each channel for routing at least one cable from one of the blades and toward a rear of the rack; and
a channel array capable of being coupled with the frame, the channel array including a number of channels, each channel for routing at least one cable from one of the blades and towards one side of the rack wherein each channel is defined by a channel floor and two opposing channel sidewalls extending from the channel

floor, each of the channels of the channel array extends along an approximate ninety degree arc.

18. A cable clip comprising:
a longitudinally extending body having a first end and an opposing second end;
a number of clasps disposed on each of two opposing sides of the body between the first and second ends, each of the clasps for holding a cable;
a first coupling mechanism disposed at the first end of the body, the first coupling mechanism for attaching the cable clip to one end of another cable clip; and
a second coupling mechanism disposed at the second end of the body, the second coupling mechanism for attaching the cable clip to one end of another cable clip.

29. A bundle clip comprising:
a cylindrical shaped body extending from a first end to an opposing second end and defining an interior region having size sufficient to receive a number of cables;
an entry disposed between the first and second ends and opening into the interior region, the entry having a size less than a diameter of one of the cables;
a first coupling mechanism disposed on a side of the body, the first coupling mechanism for attaching the bundle clip to another bundle clip; and
a second coupling mechanism disposed on an opposing side of the body, the second coupling mechanism for attaching the bundle clip to another bundle clip.

41. A rack mounted installation comprising:
a rack, the rack comprising a generally rectangular housing having an interior cavity;
a number of blades disposed in the interior cavity of the housing, each of at least some of the blades including a number of connectors, each connector for coupling with a cable; and
a cable harness, the cable harness including
a frame attached to the rack, the frame including a number of channels, each channel for routing at least one cable from one of the blades and toward a rear of the rack; and
a channel array attached to the frame, the channel array including a number of channels, each channel for routing at least one cable from one of the blades and towards one side of the rack wherein each channel is defined by a channel floor and two opposing channel sidewalls extending from the channel floor, each of the channels of the channel array extends along an approximate ninety degree arc.

47. A method comprising:
securing a first set of cables extending from a blade in a first cable clip, the blade disposed in a rack;
securing a second set of cables extending from the blade in a second cable clip, wherein each of the first cable clip and the second cable clip comprise a longitudinally extending body having a number of clasps disposed on each of two opposing sides of the

body between a first end of the body having a first coupling mechanism disposed thereon, and an opposing second end of the body having a second coupling mechanism disposed thereon;

- attaching the second cable clip to the first cable clip;
- inserting the first set of cables into a first bundle clip;
- inserting the second set of cables into a second-bundle clip; and
- attaching the second bundle clip to the first bundle clip.

51. A method comprising:

- disposing a first group of cables within a first channel of a cable harness, the cable harness installed on a rack, the first channel routing the first group of cables towards a side of the rack;

- disposing a second group of cables within a second channel of the cable harness, the second channel routing the second group of cables towards a rear of the rack;

- holding the first group of cables within a corresponding first number of interconnected bundle clips; and

- holding the second group of cables within a corresponding second number of interconnected bundle clips, wherein each bundle clip comprises a cylindrical shaped body extending from a first end to an opposing second end and defining an interior region having size sufficient to receive a number of cables;

- an entry disposed between the first and second ends and opening into the interior region, the entry having a size less than a diameter of one of the cables;

- a first coupling mechanism disposed on a side of the body, the first coupling mechanism for attaching the bundle clip to another bundle clip; and

- a second coupling mechanism disposed on an opposing side of the body, the second coupling mechanism for attaching the bundle clip to another bundle clip.

Following is a discussion of the most relevant prior art patents and each category of prior art references. Independent claims 1, 18, 29, 41, 47 and 51 are patentably distinguishable over each of the prior art references for at least the reasons set forth below.

U.S. Patent Number 6,127,631

U.S. Patent Number 6,127,631, "Chassis System for Cable Management" issued to Green et al. on October 3, 2000 (Green), describes a cable management system having a frame for holding communication modules. The system also includes a number of

cable channels (tunnels) nest to the frame. The cable channels are defined by a bottom surface, a top surface, and sidewall surfaces extending from the bottom surface to the top surface. The cable channels form a completely bound aperture. Cables are then routed through the cable channels.

Independent claims 1 and 41 are directed to a system including a cable harness having a frame with a number of cable-routing channels, and a channel array attached to the frame for routing cables. Each channel of the channel array is defined by a channel floor and two opposing channel sidewalls extending from the channel floor, each of the channels of the channel array extends along an approximate ninety degree arc.

The limitation of the channels of the channel array being defined by a channel floor and two opposing channel sidewalls is not disclosed or suggested by Green. Nor is the limitation of the channels of the channel array extending along an approximate ninety degree arc. Therefore, independent claims 1 and 41 are patentably distinguishable over Green. Claims 2 – 17 and claims 42 – 46, depend, directly or indirectly, from claims 1, and 41 respectively, and are therefore, patentably distinguishable over Green for at least the reasons stated above.

U.S. Patent Number 6,215,064

U.S. Patent Number 6,215,064, “Electronics Jumper Management Assembly” issued to Noble et al. on April 10, 2001 (Noble), describes an assembly for routing optical fibers. The assembly includes a panel which mounts to an equipment rack. The panel has portals through which the optical fibers are routed. The panel also includes support trays extending from the panel to support the optical fibers. The support trays include clips to loosely hold the optical fibers in the trays.

Independent claims 1 and 41 are directed to a system including a cable harness having a frame with a number of cable-routing channels for routing cables to the rear of a rack to which the frame is attached. The frame also includes a channel array attached to the frame for routing cables. Each channel of the channel array is defined by a channel floor and two opposing channel sidewalls extending from the channel floor, each of the channels of the channel array extends along an approximate ninety degree arc.

The limitation of the channels of the channel array extending along an approximate ninety degree arc is not disclosed or suggested by Noble. Therefore, independent claims 1 and 41 are patentably distinguishable over Noble. Claims 2 – 17 and claims 42 – 46, depend, directly or indirectly, from claims 1, and 41 respectively, and are therefore, patentably distinguishable over Noble for at least the reasons stated above.

U.S. Patent Number 5,731,546

U.S. Patent Number 5,731,546, “Telecommunications Cable Management Tray with a Row of Arcuate Cable Guide Walls” issued to Miles et al. on March 24, 1998 (Miles) does not include a frame having a number of cable-routing channels and is therefore claims 1 and 41 are patentably distinguishable. Miles describes a cable management apparatus having cable channels defined by arcuate guide walls. The channels have a wide entrance and narrow exit and a curvature selected to accommodate the cable bend radius.

Independent claims 1 and 41 are directed to a system including a cable harness having a frame with a number of cable-routing channels, and a channel array attached to the frame for routing cables. Each channel of the channel array is defined by a channel

floor and two opposing channel sidewalls extending from the channel floor, each of the channels of the channel array extends along an approximate ninety degree arc.

The channels of Miles are defined by guide walls, therefore the limitation of the channels of the channel array being defined by a channel floor and two opposing channel sidewalls is not disclosed or suggested by Miles. Nor is the limitation of the channels of the channel array extending along an approximate ninety degree arc. Therefore, independent claims 1 and 41 are patentably distinguishable over Miles and are not rendered obvious by Miles. Claims 2 – 17 and claims 42 – 46, depend, directly or indirectly, from claims 1, and 41 respectively, and are therefore, patentably distinguishable over Miles for at least the reasons stated above.

Design Patent Number D456,241

U.S. Patent Number D456,241, “Cable Guide” issued to Chan et al. on April 30, 2002 (Chan) does not include a frame having a number of cable-routing channels and is therefore claims 1 and 41 are patentably distinguishable. Chan describes a cable guides. The cable guides of Chan do not form channels.

Independent claims 1 and 41 are directed to a system including a cable harness having a frame with a number of cable-routing channels, and a channel array attached to the frame for routing cables. Each channel of the channel array is defined by a channel floor and two opposing channel sidewalls extending from the channel floor, each of the channels of the channel array extends along an approximate ninety degree arc.

The cable guides of Chan do not form channels that are defined by a channel floor and two opposing channel sidewalls as claimed in claims 1 and 41. This limitation is not disclosed or suggested by Chan. Nor is the limitation of the channels of the channel

array extending along an approximate ninety degree arc. Therefore, independent claims 1 and 41 are patentably distinguishable over Chan, and are not rendered obvious by Chan. Claims 2 – 17 and claims 42 – 46, depend, directly or indirectly, from claims 1, and 41 respectively, and are therefore, patentably distinguishable over Chan for at least the reasons stated above.

U.S. Patent Number 6,540,312

U.S. Patent Number 6,540,312, “Cable Guide System” issued to Lane on April 1, 2003 (Lane) does not include a frame having a number of cable-routing channels and is therefore claims 1 and 41 are patentably distinguishable. Lane describes a cable guide system comprised of a cable holding matrix. The cable holding matrix includes two pluralities of aligned posts protruding from the surface of a support member. The posts are spaced such that cables may be guided between two neighboring posts in the second plurality of posts, bent around a neighboring post, and positioned between two neighboring posts of the first plurality of posts.

Independent claims 1 and 41 are directed to a system including a cable harness having a frame with a number of cable-routing channels, and a channel array attached to the frame for routing cables. Each channel of the channel array is defined by a channel floor and two opposing channel sidewalls extending from the channel floor, each of the channels of the channel array extends along an approximate ninety degree arc.

Lane uses posts to guide cables and therefore does not form channels that are defined by a channel floor and two opposing channel sidewalls as claimed in claims 1 and 41. This limitation is not disclosed or suggested by Lane. Nor is the limitation of the channels of the channel array extending along an approximate ninety degree arc.

Therefore, independent claims 1 and 41 are patentably distinguishable over Lane, and are not rendered obvious by Lane. Claims 2 – 17 and claims 42 – 46, depend, directly or indirectly, from claims 1, and 41 respectively, and are therefore, patentably distinguishable over Lane for at least the reasons stated above.

U.S. Patent Number 6,678,456

U.S. Patent Number 6,678,456, “Fiber Optic Cable Management System” issued to Etemad-Moghadan on January 13, 2004 (Etemad-Moghadan) does not include a frame having a number of cable-routing channels and is therefore claims 1 and 41 are patentably distinguishable. Etemad-Moghadan describes a cable management system having a cable guides. The guides have a radius-limiting portion to prevent cable from being bent beyond their minimum bend radii. This radius-limiting portion determines the spacing of the cable guides. The guides are formed and positioned so that cables may be channeled by a guide toward the top of a housing or may be channeled through the guide to another guide.

Independent claims 1 and 41 are directed to a system including a cable harness having a frame with a number of cable-routing channels, and a channel array attached to the frame for routing cables. Each channel of the channel array is defined by a channel floor and two opposing channel sidewalls extending from the channel floor, each of the channels of the channel array extends along an approximate ninety degree arc.

Etemad-Moghadan uses guides that completely enclose the cables and therefore does not form channels that are defined by a channel floor and two opposing channel sidewalls as claimed in claims 1 and 41. This limitation is not disclosed or suggested by Etemad-Moghadan. Nor is the limitation of the channels of the channel array extending

along an approximate ninety degree arc. Moreover, each guide of Etemad-Moghadan does not route a cable to a specific location (e.g., a side of the rack), but may route a cable through to another guide. Therefore, independent claims 1 and 41 are patentably distinguishable over Etemad-Moghadan, and are not rendered obvious by Etemad-Moghadan. Claims 2 – 17 and claims 42 – 46, depend, directly or indirectly, from claims 1, and 41 respectively, and are therefore, patentably distinguishable over Etemad-Moghadan for at least the reasons stated above.

U.S. Patent Number 5,806,811

U.S. Patent Number 5,806,811, “Wire Manager for Use with Stand-Off Legs” issued to Viklund et al. on September 15, 1998 (Viklund), describes a wire manager having a plurality of exterior retaining members. The retaining members have wire management areas for confining wires. The wire management areas have beveled portions for inserting wires into the wire management areas.

Independent claims 18 and 47 include the limitation of a cable clip having a longitudinally extending body with a number of clasps disposed along each of two opposing sides of the body. At each end of the body is a coupling mechanism for coupling the cable clip to another cable clip.

The limitation of a cable clip having a first coupling mechanism at a first end of the clip body and a second coupling mechanism at the second end of the clip body is not disclosed or suggested by Viklund. Nor is the limitation of a number of clasps disposed along each of two opposing sides of the body. Therefore, independent claims 18 and 47 are patentably distinguishable over Viklund. Claims 19 – 28 and claims 48 -50, depend,

directly or indirectly, from claims 18 and 47, respectively, and are therefore, patentably distinguishable over Viklund for at least the reasons stated above.

U.S. Patent Number 4,688,961

U.S. Patent Number 4,688,961, “Combination Clip” issued to Shioda et al. on August 25, 1987 (Shioda), describes a combination clip comprising a pair of identical clips, each having a pivotal coupler portion. The pivotal coupler portion includes a shaft portion and a clamp portion which is open on one side, extends perpendicular to the shaft portion, and is capable and fits the shaft portion of the other clip. Each clip also includes a holder portion for holding a wire.

Independent claims 29 and 51 have the limitations of a bundle clip having a cylindrical body with a first coupling mechanism disposed on one side of the body and a second coupling mechanism disposed on an opposing side of the body. Each of the coupling mechanisms can couple the bundle clip to another, respective, bundle clip.

The limitation of a first coupling mechanism on one side of the cylindrical body and a second coupling mechanism on an opposing side of the cylindrical body is not disclosed or suggested by Shioda. Therefore, independent claims 29 and 51 are patentably distinguishable over Shioda. Claims 30 – 40 and claims 52 and 53, depend, directly or indirectly, from claims 29 and 51, respectively, and are therefore, patentably distinguishable over Shioda for at least the reasons stated above.

Design Patent Number D493,355

U.S. Patent Number D493,355, "Plurality of Coupled Cable Tie Heads" issued to Dinh on July 27, 2004 (Dinh), illustrates a plurality of coupled cable tie heads each having an interior region.

Independent claims 29 and 51 have the limitations of a bundle clip having a cylindrical body with a first coupling mechanism disposed on one side of the body and a second coupling mechanism disposed on an opposing side of the body. Each of the coupling mechanisms can couple the bundle clip to another, respective, bundle clip.

The limitation of a first coupling mechanism on one side of the cylindrical body and a second coupling mechanism on an opposing side of the cylindrical body is not disclosed or suggested by Dinh. Moreover, Dinh does not disclose the limitation of an entry disposed between first and second ends of the cylindrical body of the bundle clip as claimed in claims 29 and 51. Therefore, independent claims 29 and 51 are patentably distinguishable over Dinh. Claims 30 – 40 and claims 52 and 53, depend, directly or indirectly, from claims 29 and 51, respectively, and are therefore, patentably distinguishable over Dinh for at least the reasons stated above.

Conclusion

For at least the foregoing reasons, Applicant submits that all pending claims 1-54 are in condition for allowance and such action is earnestly solicited. The applicants therefore respectfully request that this Petition to Make Special be granted and that examination of the present application be advanced to the fullest extent possible.


The petition fee of \$130.00 is included herewith. If there are any additional charges, please charge them to our Deposit Account Number 02-2666. If a telephone

conference would facilitate the processing of this petition, the Examiner is invited to contact Gregory Caldwell at 503-439-8778.

Respectfully Submitted

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN, LLP

Dated: 3/4/05



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